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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,864	04/20/2001	Kunihiko Tsukagoshi	876564.0059	5307

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EXAMINER

SHINGLETON, MICHAEL B

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 01/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09-838,864

Applicant(s)

Tsukagoshi et al.

Examiner

SHINGLETON

Group Art Unit

2817

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10-5-2001.
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 4, 5, 7 and 8 ☒ are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 4, 5, 7 and 8 ☒ are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Art Unit:2817

DETAILED ACTION

Claim Rejections- 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonowich 5,063,359(Leonowich) in view of Van Den Homberg 6,111,473 (Homberg) and Tomatsu et al. 5,285,168 (Tomatsu).

Leonowich discloses an oscillation circuit, i.e. oscillator, wherein the resonant circuit (Note that this is what applicant calls the "oscillator".) is directly connected to the input of the differential amplifier. Note that Leonowich utilizes a double ended output amplifier, however, it is common place to employ a single ended output in oscillation circuits as taught by Homberg. The choice of using a single ended output or a double ended output is dependent on where the oscillator is to be used. For example, in a floating ground circuit one would employ the double ended output oscillator and in a single ended ground based circuit one would employ the single ended oscillator. Such a choice merely represents a choice within the skill of one of routine skill in the art and is taught by Homberg and thus for these reasons one of ordinary skill in the art at the time the invention was made would have found it obvious to select a single or double ended output differential amplifier for the differential amplifier 20 of Leonowich.

Leonowich fails to describe the specifics of the differential amplifier as claimed.

Art Unit:2817

Figs. 1 and 3 of Tomatsu discloses the specific differential amplifier having all the recited transistors connected in the manner as claimed. A comparison of the structure of Figure 6 of the instant invention with the structure Figs. 1 and 3 of Tomatsu reveals that:

Element of Tomatsu	Corresponding element of Figure 6.
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Q20-----	11
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Q21-----	5
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Q22-----	6
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Q23-----	7
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Q24-----	8
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Q25-----	12
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Q26-----	1
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Q27-----	2
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Q28-----	3
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Q29-----	4
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Q31-----	10
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Q32-----	9
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The advantage of the differential amplifier circuit of Tomatsu over conventional differential amplifier circuits rests in the fact that such an arrangement offers "low power consumption" (see col. 3, ln 4) and has a "small characteristic dispersion" (see col. 3, ln 3). It is a better differential amplifier.

Art Unit:2817

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the differential amplifier of Leonowich with that of Tomatsu so as to lower power consumption which is always a concern in oscillator circuits and provide for a small characteristic dispersion as both taught by Tomatsu..

Double Patenting Rejection

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4, 5, 7 and 8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over all the claims of U.S. Patent No. 6,242,980 in view of Leonowich 5,063,359 (Leonowich).

The claims of the '980 Patent set forth a more limiting differential amplifier circuit than the claims of the instant application.(Note that the claims of the '980 Patent recite the additional

Art Unit:2817

feature where the commonly shared gates of the two current mirrors are connected via a common node.) The claims of the '980 Patent contain all the limitations as it concerns the differential amplifier part as is claimed in the instant application. The claimed invention of the '980 Patent does not recite the use of an "oscillator" connected to the input of the differential amplifier so as to form an oscillation circuit, i.e. oscillator. Note that applicant uses the terminology "oscillator" to represent what is commonly called the resonant portion of the oscillator; it is recognized in the art to name the entire circuit the oscillator. It is conventional to utilize a resonant circuit (oscillator) at the input of a differential amplifier so as to form an oscillator as taught by Leonowich.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a resonant circuit at the input of the differential amplifier as claimed in the '980 patent so as to form an oscillator as taught by Leonowich.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the placement of "oscillator" at the input of the specific differential amplifier arrangement as claimed must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

OK

Applicant's arguments filed 10-5-2001 have been fully considered but they are not persuasive.

The terminal disclaimer submitted 10-5-2001 has been determined to not be proper for the serial number or the application (or the number of the patent) which forms the basis for the double patenting rejection is missing or incorrect.

Art Unit:2817

Applicant states "Applicant's agree with the examiner that the Leonowich Patent fails to describe the specifics of the differential amplifier as claimed." The specifics of the amplifier are not shown in Leonowich for conventional structures can be employed as indicated by the use of the generic symbol 20 in Leonowich. Tomatsu et al. clearly shows the use of a conventional amplifier structure that provides the same function as that of Leonowich..

Applicant states that there is "no teaching to modify or replace the differential amplifier of Leonowich" and that "there is no teaching of a need to lower power consumption...". The examiner respectfully disagrees, for there is almost always a need to lower power consumption in electronic circuitry. Oscillator circuits find use in many battery powered equipment where power consumption is extremely important. It seems to go against engineering reasoning to choose an amplifier that is very power inefficient when there are amplifiers known to those of ordinary skill that does the same job with less power consumption. As stated above is it generally accepted that most any conventional differential amplifier can be used for the amplifier of Leonowich and Tomatsu shows a conventional amplifier structure that happens to be of the same structure as that claimed and additionally the conventional differential amplifier structure of Tomatsu is power efficient..

Applicant also recites that the Tomatsu shows preamplifiers etc. and that on this basis "Applicant's traverse the Examiner's determination that Tomatsu discloses the specific differential amplifier circuitry as claimed." The examiner's Office Action is very specific as to what elements the examiner is utilizing to meet to the claimed invention. The fact that Tomatsu shows more than claimed does not distract from one of ordinary skill recognizing the conventional differential amplifier structure in Tomatsu. It is this differential amplifier structure that applicant is utilizing to be driven by a resonant circuit and one of ordinary skill would have been motivated to utilize such a conventional differential amplifier for the reasons given above.

Applicant takes issue with the differential outputs in Leonowich stating that "Leonowich does not disclose combining (the) differential amplification outputs as recited in Claim 7 or an output buffer in claim 8." Again Leonowich does not show the specifics and these specifics are shown and taught in the conventional differential amplifier of Tomatsu. As to the differential output shown in Leonowich, the examiner has addressed this issue in the Office action. Namely it is just a matter of whether a balanced output (differential output) or an unbalanced output is needed (Single ended output.). Such is seen as being within the skill of one of routine skill. However, the examiner did cite the Van Den Homberg reference for the showing of the conventional nature of utilizing a single ended output for the oscillator in Leonowich.

Art Unit:2817

Applicant's final arguments is that the prior art does not solve the same problem as that of applicant. Just because the prior may fail to recognize features of the structure made obvious above this does not mean that the combination is not obvious. The end result of the obvious combination maybe that the features recognized by applicant are an obvious consequence. The examiner sees no showing of unexpected results in applicant's arguments. Furthermore, if obvious for one reason, it is obvious for all (See In re Graf, 145 USPQ 197 (CCPA 1965); In re Finsterwalder, 168 USPQ 530 (CCPA 1971); In re Gershon, 152 USPQ 602 (CCPA 1967); In re Skoner, 186 USPQ 80 (CCPA 1975) and In re Lintner, 173 USPQ 560 (CCPA 1972)).

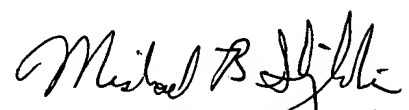
Note that the examiner sees no arguments concerning the drawing objection. Therefore this objection is maintained.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956. FAX no. (703) 308-7724. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael Shingleton whose telephone number is (703) 308-4903. The examiner's normal work schedule is Mon-Fri. with first Fridays of the bi-week off. For example January 4, 2001 would be a normal first Friday off. The examiner's normal hours range from 5:30-10:30 AM to 2:30-8:00 PM.

Shingleton
December 27, 2001


MICHAEL B SHINGLETON
PRIMARY EXAMINER
GROUP ART UNIT 2817